

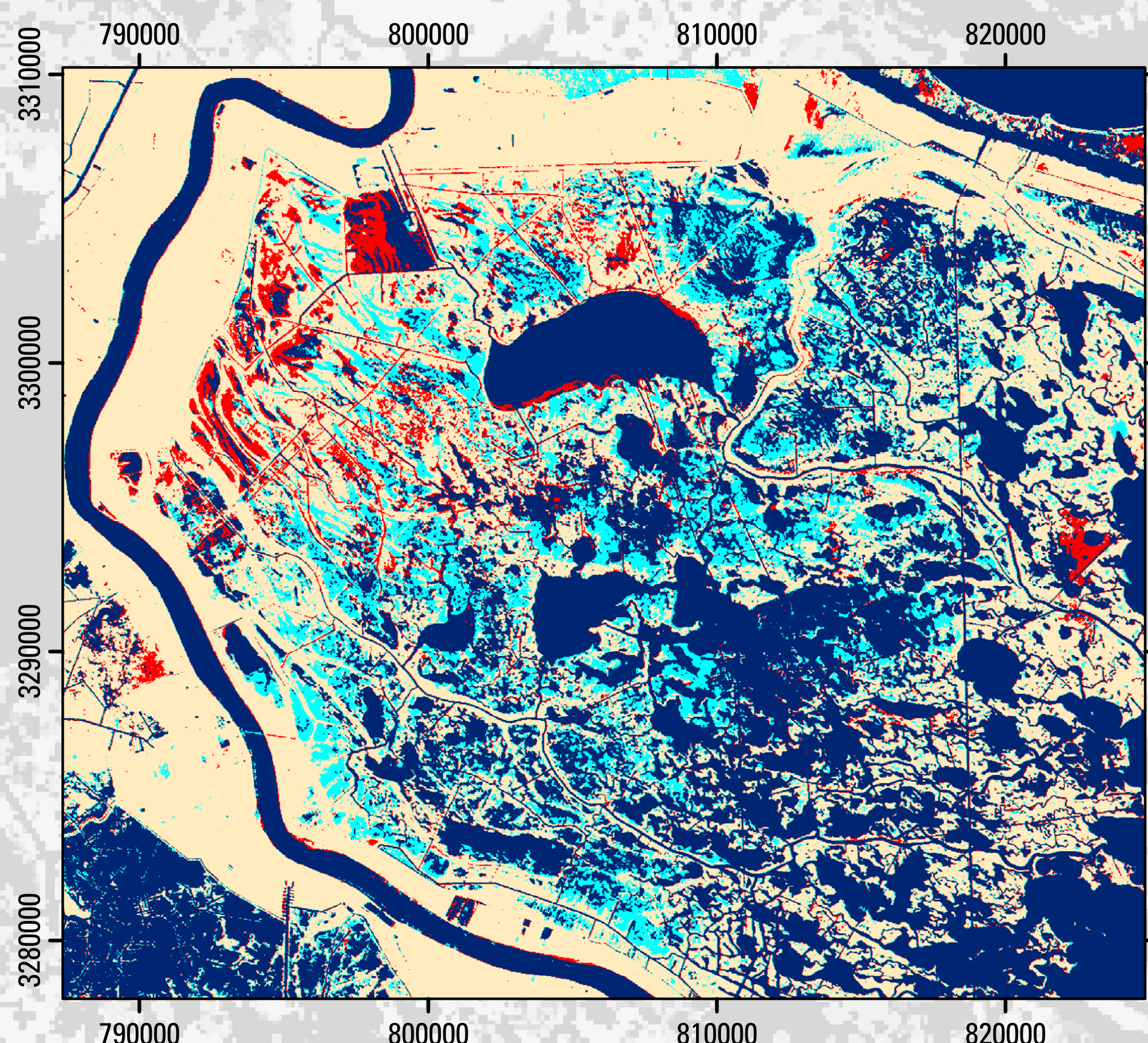
Scientific Investigations Map 3207
Pamphlet accompanies map

Land Area Change Analysis Following Hurricane Impacts in Delacroix, Louisiana, 2004–2009

By Monica Palaseanu-Lovejoy,¹ Christine Kranenburg,¹ and John C. Brock²

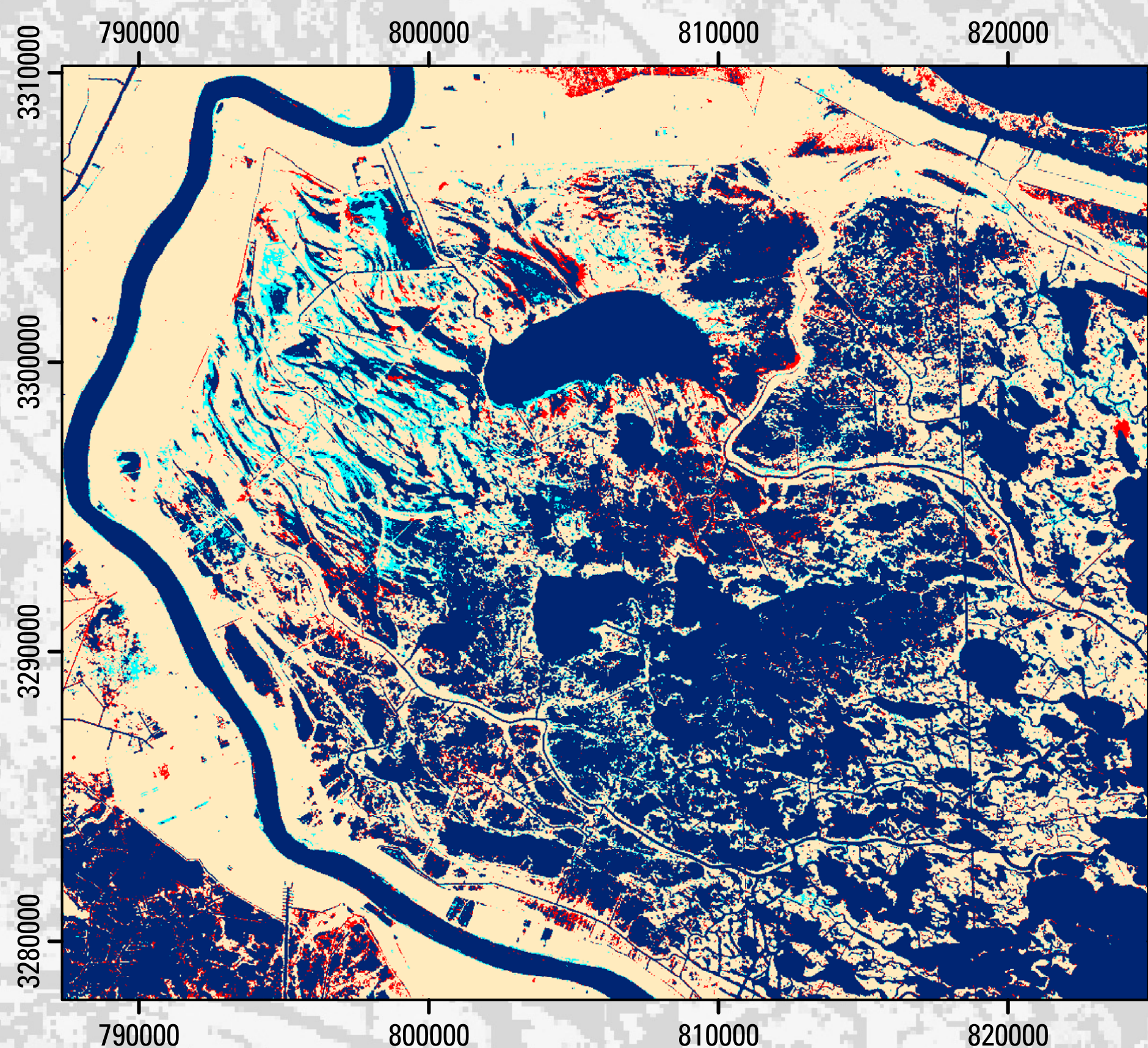
¹Jacobs Technology, contracted to U.S. Geological Survey, ²U.S. Geological Survey

Land Change Analysis 2004–2006:
Hurricane Katrina (Aug. 2005)



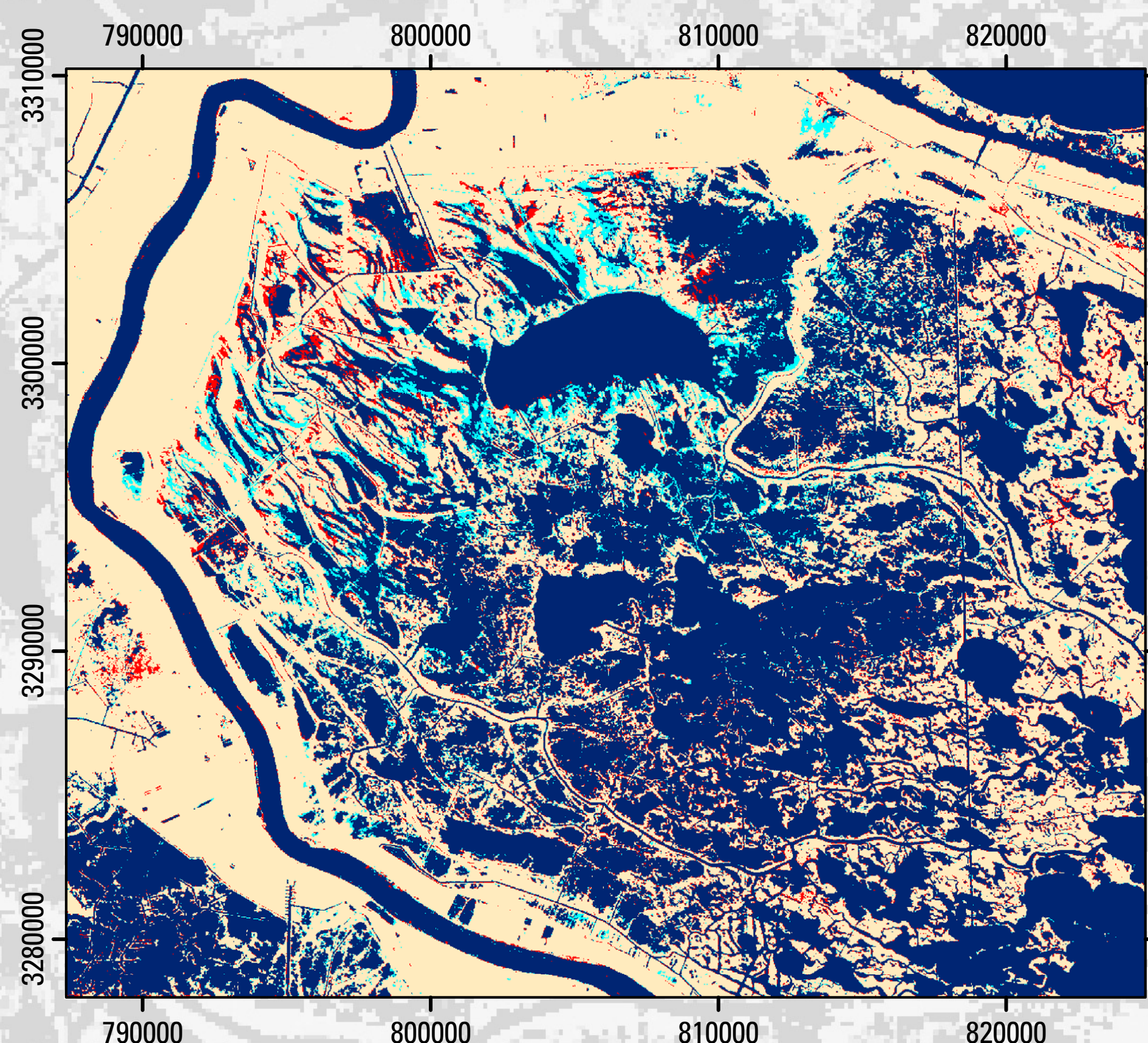
Mar. 2004	Sept. 2006	Change Analysis Interpretation
Land	Land	Unchanged land areas (44.92%)
Water	Land	New land areas (5.60%)
Land	Water	New water areas (11.81%)
Water	Water	Unchanged water areas (37.67%)

Land Change Analysis 2006–2008:
pre-Hurricane Gustav (Sept. 2008)



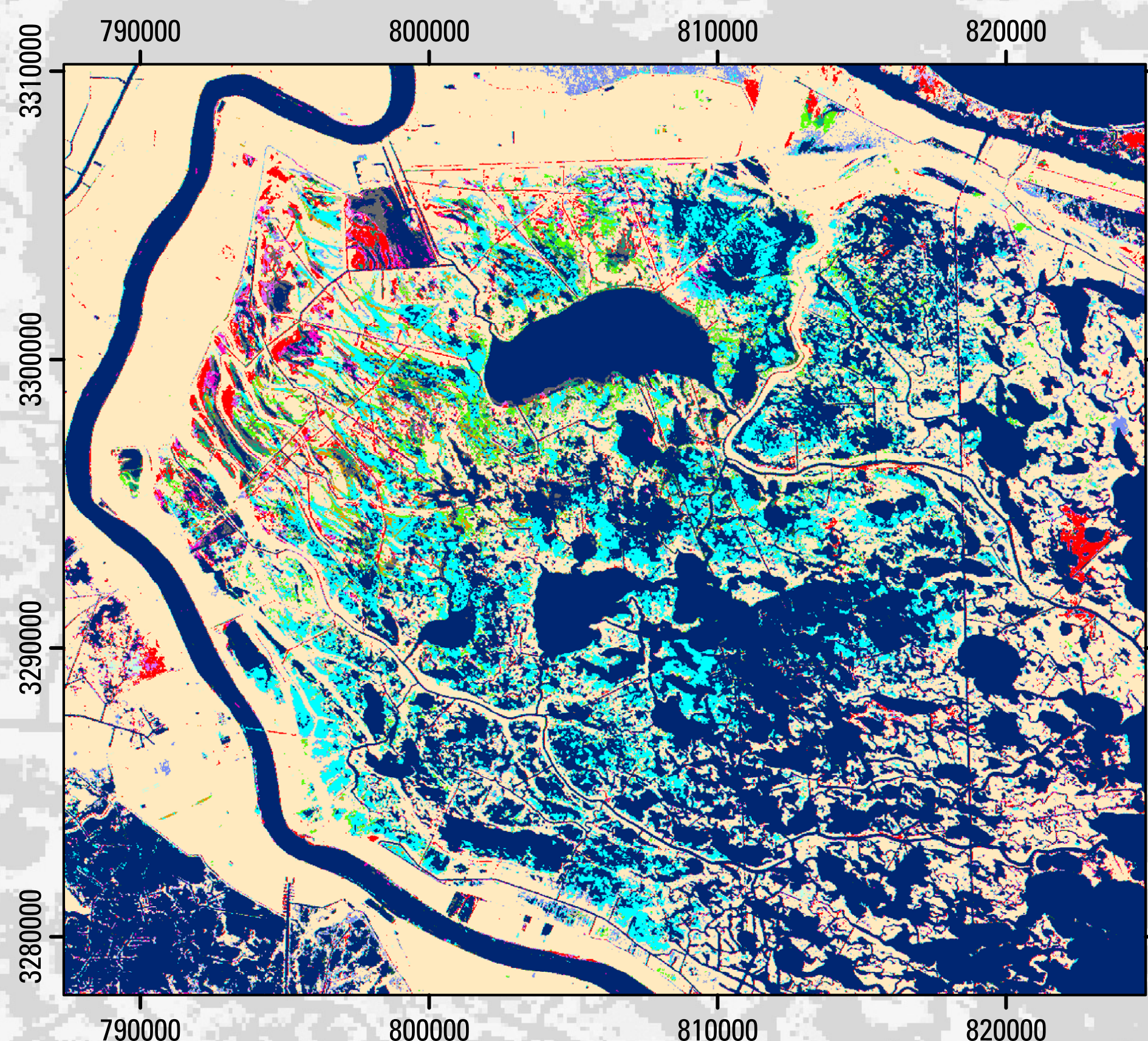
Sept. 2006	Mar. 2008	Change Analysis Interpretation
Land	Land	Unchanged land areas (46.75%)
Water	Land	New land areas (3.75%)
Land	Water	New water areas (3.76%)
Water	Water	Unchanged water areas (45.73%)

Land Change Analysis 2008–2009:
Hurricane Gustav (Sept. 2008)

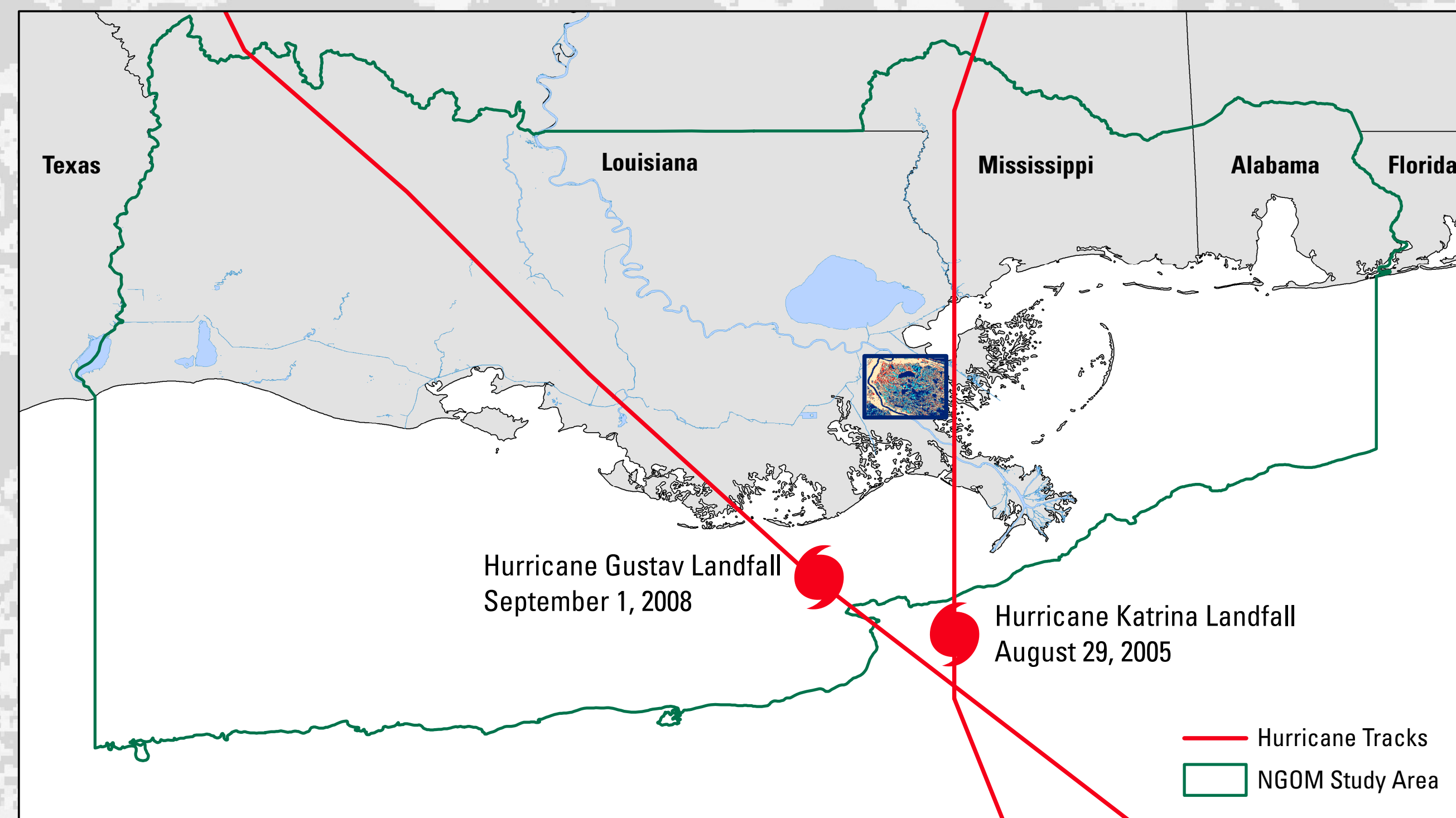


Mar. 2008	Nov. 2009	Change Analysis Interpretation
Land	Land	Unchanged land areas (46.67%)
Water	Land	New land areas (3.94%)
Land	Water	New water areas (3.84%)
Water	Water	Unchanged water areas (45.56%)

Land Change Analysis 2004–2009



Mar. 2004	Sept. 2006	Mar. 2008	Nov. 2009	Change Analysis Interpretation
Land	Land	Land	Land	Unchanged land (41.37%)
Water	Land	Land	Land	Permanent land Katrina (3.25%)
Land	Water	Land	Land	Temporary water Katrina (1.48%)
Water	Water	Land	Land	Drained fields after 2006 (0.55%)
Land	Land	Water	Land	Water-level fluctuation 2008 (1.32%)
Water	Land	Water	Land	Vegetation seasonality (0.69%)
Land	Water	Water	Land	Drainage after 2008 (1.18%)
Water	Water	Water	Land	New land Gustav (0.75%)
Land	Land	Land	Water	New water Gustav (1.39%)
Water	Land	Land	Water	Erosion Gustav (0.74%)
Land	Water	Land	Water	Post-storms flooding/seasonality (0.97%)
Water	Water	Land	Water	Drainage in 2008 (0.74%)
Land	Land	Water	Water	Dead vegetation, after 2006 (0.84%)
Water	Land	Water	Water	Temporary new land Katrina (0.92%)
Land	Water	Water	Water	Permanent new water Katrina (8.17%)
Water	Water	Water	Water	Unchanged water (35.63%)



Northern Gulf of Mexico (NGOM) study area showing the track of hurricanes Gustav and Katrina in relation to the land change study area of this map.

Image sources:
Base maps derived from USGS Landsat imagery 2004, 2006, 2008, and 2009
30 meter pixel resolution
Projected using WGS 84 datum and Universal Transverse Mercator (UTM) Zone 15 North
Longitude of Central meridian: -93.00000